CLAIM AMENDMENTS

Please amend claims 1-5, 8, 9, 11-13, 16, 18 and 20 as follows:

1. (Currently Amended) A method for automatically verifying a hardware design based on a hardware specification document, said method comprising the steps of:

designating a plurality of predefined elements within a hardware specification document, wherein said hardware specification document provides a hardware design for a hardware device;

storing said plurality of predefined elements within a database of hardware components, wherein each predefined element of said plurality of predefined elements is associated with a hardware component of said hardware device;

embedding said plurality of predefined elements within said hardware specification document preparatory to storing said predefined elements in said database, wherein said plurality of predefined elements comprise flags which can be utilized by a document reader script;

creating at least one RTL Hardware Description code file from said database, said RTL Hardware description code file(s) defining said predefined elements stored in said database; and

automatically comparing physical components of said hardware device with said predefined elements maintained within said database of said hardware components upon an initial power-up of said hardware device, in order to verify that said hardware device functions according to said hardware specification document.

2. (Currently Amended) The method of claim 1 further comprising the step of:

configuring said hardware specification document to include a specified format which is readable by a document parsing utility for storing said plurality of predefined elements in said database, wherein said specified format includes at

least one of the following sections: register map tables, address map tables, and register descriptions.

3. (Currently Amended) The method of claim 1 further comprising the step of:

~~embedding said plurality of predefined elements within said hardware specification document, wherein said plurality of predefined elements comprise flags which can be utilized by a document reader script.~~

saving said document including said embedded plurality of predefined elements for use by internal/external engineers as formatted preparatory to storing said plurality of predefined elements in said database.

4. (Currently Amended) The method of claim [1]3~~wherein said database of hardware components comprises a database of storage elements visible to a microcontroller~~ further comprising the method steps of:

using said saved document as formatted; and

saving said used document to a text-only document which can be utilized by said document reader script.

5. (Currently Amended) The method of claim 4 ~~further comprising the step of:~~

~~automatically creating a plurality of files containing definitions and declarations for said storage elements and for every bit field within registers thereof~~

wherein storing said plurality of predefined elements in said database of hardware components comprises reading said saved document using a document parsing utility.

6. (Original)The method of claim 1 further comprising the step of:

dynamically creating a plurality of tables for utilization by a POST to verifying said hardware device upon a power up of said hardware device.

7. (Original)The method of claim 1 further comprising the step of:

automatically forcing said hardware device to fail if said hardware device does not comply with said hardware specification document, in response to automatically comparing physical components of said hardware device with said predefined elements maintained within said database of said hardware components upon an initial power-up of said hardware device.

8. (Currently Amended) A system for automatically verifying a hardware design based on a hardware specification document, said system comprising:

a plurality of predefined elements designated within a hardware specification document, wherein said hardware specification document provides a hardware design for a hardware device;

a database of hardware components for storing said plurality of predefined elements, wherein each predefined element of said plurality of predefined elements is associated with a hardware component of said hardware device;

wherein said plurality of predefined elements are embedded within said hardware specification document preparatory to storing said predefined elements in said database, wherein said plurality of predefined elements comprise flags which can be utilized by a document reader script;

an RTL auto-generation module for creating at least one RTL Hardware description code from said database, said RTL Hardware description code file(s) defining said predefined elements stored in said database; and

a comparing module for automatically comparing physical components of said hardware device with said predefined elements maintained within said database of said hardware components upon an initial power-up of said hardware device, in

order to verify that said hardware device functions according to said hardware specification document.

9. (Currently Amended) The system of claim 8 further comprising a document parsing utility for storing said plurality of predefined elements in said database.

10. (Original) The system of claim 9 wherein said hardware specification document comprises a specified format which is readable by said document parsing utility, wherein said specified format includes at least one of the following sections: register map tables, address map tables, and register descriptions.

11. (Currently Amended) The system of claim 8 wherein ~~said plurality of predefined elements are embedded within said hardware specification document, such that said plurality of predefined elements comprise flags which can be utilized by a document reader script.~~ said document including said embedded plurality of predefined elements comprises a saved document for use by internal/external engineers as formatted preparatory to storing said predefined elements in said database.

12. (Currently Amended) The system of claim 8 11 wherein said ~~database of hardware components comprises a database of storage elements visible to a microcontroller~~used document is saved as a text-only document which can be utilized by said document reader script.

13. (Currently Amended) The system of claim 12 wherein said database of hardware components comprises a database of storage elements visible to a microcontroller and further comprising a plurality of files automatically generated,

which contain definitions and declarations for said storage elements and for every bit field within registers thereof.

14. (Original) The system of claim 8 further comprising a plurality of tables dynamically created for utilization by a POST to verifying said hardware device upon a power up of said hardware device.

15. (Original) The system of claim 8 further comprising a testing module for automatically forcing said hardware device to fail if said hardware device does not comply with said hardware specification document, in response to automatically comparing physical components of said hardware device with said predefined elements maintained within said database of said hardware components upon an initial power-up of said hardware device.

16. (Currently Amended) The system of claim 8 ~~further comprising~~ wherein said RTL auto-generation module comprises an RTL auto-generation utility for generating define statements utilized by an RTL code to decode and configure at least one hardware memory and at least one register thereof.

17. (Original) The system of claim 8 further comprising a software auto-generation utility that auto-generates a same set of define statements utilized by a software code thereof.

18. (Currently Amended) A system for automatically verifying a hardware design based on a hardware specification document, said system comprising:

a plurality of predefined elements designated within a hardware specification document, wherein said hardware specification document provides a hardware design for a hardware device[,];

a database of hardware components for storing said plurality of predefined elements, wherein each predefined element of said plurality of predefined elements is associated with a hardware component of said hardware device;

a document parsing utility for storing said plurality of predefined elements in said database, wherein said hardware specification document comprises a specified format which is readable by said document parsing utility, wherein said specified format includes at least one of the following sections: register map tables, address map tables, and register descriptions;

an RTL auto-generation module for creating at least one RTL Hardware description code from said database, said RTL Hardware description code file(s) defining said predefined elements stored in said database;

a comparing module for automatically comparing physical components of said hardware device with said predefined elements maintained within said database of said hardware components upon an initial power-up of said hardware device, in order to verify that said hardware device functions according to said hardware specification document; and

wherein said plurality of predefined elements are embedded within said hardware specification document preparatory to storing said plurality of predefined elements in said database, such that said plurality of predefined elements comprise invisible flags which can be utilized by a document reader script.

19. (Original) The system of claim 18 further comprising:

a plurality of tables dynamically created for utilization by a POST to verifying said hardware device upon a power up of said hardware device; and

a testing module for automatically forcing said hardware device to fail if said hardware device does not comply with said hardware specification document, in response to automatically comparing physical components of said hardware device with said predefined elements maintained within said database of said hardware components upon an initial power-up of said hardware device.

20. (Currently Amended) The system of claim 18 ~~further comprising:~~

~~an~~ wherein said RTL auto-generation module is arranged for generating define statements utilized by an RTL code to decode and configure at least one hardware memory and at least one register thereof; and

further comprising a software auto-generation module that auto-generates a same set of define statements utilized by a software code thereof.